

7.2 Streszczenie w języku angielskim

The fundamental importance of folic acid in the human body is well known. 5-methyltetrahydrofolate is the active form of folic acid and it is a coenzyme for the transformation of nucleic acids and a catalyst for many biochemical reactions in the human body. Its presence is essential for the functioning of every cell in the human organism. The knowledge about folates is very extensive and the current science is constantly discovering further connections of folic acid with pathologies occurring at every stage of human life.

The aim of the study was to observe the phenomenon of folic acid penetration from the mother's system to the foetus, based on the analysis of the concentration of this substance in the umbilical (cord) blood and in the blood of the parturient woman, and to analyse the effect of folate supplementation by the pregnant women on the content of these compounds in the umbilical cord blood.

The activities that have been undertaken, laboratory tests and analyses confirm the thesis assumed in the study that supplementation with folic acid in the pre-conception period and during pregnancy increases the concentration of this compound in the umbilical cord blood. The period preceding conception creates a special opportunity for intervention, such as supplementation with folic acid, because it gives the best results due to increasing the amount of folate in the blood of the future mother and the foetus. Micronutrient supplementation initiated during pregnancy may significantly correct maternal nutrient deficiencies, but it is not sufficient and too late to substantially improve the health of the foetus. It is not possible to make up for the deficit that arose at the time of fertilisation during pregnancy. Dietary interventions during pregnancy may limit or reduce pregnancy pathologies, but they are also insufficient to improve the pregnancy outcomes provided by the optimisation of preconception care.

